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PROGRESS REPORT

Period: 4 September 1961 - 6 October 1961

1. AR Research

As of September 8, 1961, I.F.I. recommended complete AR treatment for the first AR type article which included:

a. Fuselage chine: Bulkheads combined with uniformly loaded, 1" thick honeycomb and "Malik" type surface loading instead of metal teeth, deep volume loading, or taper loaded blanket.

b. Nose: Metal

c. Nacelle: Metal inside and out with #2 or #3 (i.e. deepened) chine design loaded similar to fuselage. Non paint treatment on inside and outside of nacelle.

d. Fins: Plastic for movable portion with iron paint over pivot box and base spar. Metal fixed portion with iron paint on inboard and outboard sides.

e. Wings: Metal teeth, with volume and surface loading.

f. Fuselage Openings: Grating Covered

g. Q Bay Window: Metalized

h. Spike: Loaded honeycomb ring treatment

i. Exhaust: Cesium Treated

j. Cockpit: Metalized

Cross-section diagrams of this configuration were contained in the report submitted at the time of the suppliers meeting on 11 September 1961.

As of 20 September 1961, a new spike design was introduced by LAC in which the internal metal structure was significantly increased in diameter and overall volume - thus negating the rather effective treatment achieved by September 8, and thus increasing the radar cross-section of the forward aspects.

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Principal efforts of I.F.I.'s AR research since September 20 has, therefore, been directed toward trying to find an acceptable new treatment to minimize the AR impact of this very late design changed by LAC. Thus far, these efforts have not yielded what we would consider acceptable AR results.

Detailed agreements covering the balance of the AR specifications outlined above have been drafted and, after review by LAC and IFI, will be submitted to Headquarters for information and/or approval.

2. Simulation Experiment:

Work on final design and assembly of equipment is going forward as "in house" research effort. Final system designs are about 90% complete. Procurement of the few pieces of equipment required will be completed by 15 October 1961. Assembly and checkout is scheduled to be completed by 15 November 1961.

3. AR Facility:

The electronics for the new facility represents an almost complete redesign of the existing facility to permit much simpler operation. The present design will permit switching from one band to any other without any requirement for returning or checking of band limits on frequency jumping.

For the purpose of measuring progress, we break the procurement and assembly down as follows:

(1) Commercial Electronic Instrumentation (signal generators, microwave amplifiers, power supplies, etc.),
(2) Microwave Components (hybrid junctions, crystal detectors, traveling wave tubes, etc.),
(3) Electronic Supplies (vacuum tubes, condensors, relays, etc.),
(4) Antennae, feeds, towers, etc.

The following table gives a rough breakdown of status in the first three categories:

Category	Dollar Estimate	% Ordered 10-6-61	% Delivered 10-6-61	% Delivered 11-6-61
1	$17,763.00	100%	60%	100%
2	18,000.00	90%	10%	75%
3	5,000.00	75%	10%	100%
4	13,075.00	90%	0%	0%

As presently designed, the electronic equipment with the exception of the polar plotter will fit in a total of three relay racks. This is to be contrasted with the twelve relay racks presently dedicated to these functions. The new facility, in its earliest version, will not have remote control over step attenuators during calibration. It is planned to incorporate such a feature as a part of the improvement program.

Features which have not been firmed up include: (1) calibration sphere installation, (2) calibration leveling provisions at the polar plotter, (3) chopper and line driver circuitry for the one-half mile coax signal line, (4) platform for the air-supported canvas bag.

Rehabilitation and construction at the INs site has not been started. Procurement of GFE equipment for the site, however, has been initiated. Delivery of the antenna tower and two eight foot dishes are expected in the next two weeks. 10 KW generators required are available from AF stocks but until more detailed calculations have been made on control building power requirements, procurement cannot be initiated. It is not expected that the small rehabilitation and construction effort required will present any difficulty in meeting scheduled operational dates.